the common error of treating energy as a concrete reality or existent over and above the things which manifest activity and exert forces; together with the practice of saying that one form of energy is convertible or trans-formable into another; which, of course, is an absurd expression. But this way of speaking is so common, so orthodox, that its absurdity (if taken literally) is masked for mosj; of us. Consider, then, a closely parallel case. You have two florins in your pocket when you land in America, and you change them into two half dollars; and you might easily persuade a young child to believe that you had really performed this bit of magic. But even the child might be sceptical if you showed him a dollar bill and told him that you had converted the two florins into that. Yet the statement would be equally true and untrue in this second form. Clearly it is the value which you conserve in your exchange transaction; the value of the two florins is the same as or equal to the value of the dollar bill; but the florins are not magically converted into the dollar. It may be objected that the analogy is not sound, because in the financial exchange nothing is lost or gained on either side, whereas in an energy transaction there is an actual loss of energy-value on the one side and an equivalent gain on the other; therefore something must pass from the one side to the other, and what is that if it is not a quantity of energy ? Consider, then, the concrete instance of the cartridge

exploding in a rifle-barrel and expelling the bullet. We say that the chemical energy of the powder is converted into the kinetic energy or momentum of the bullet (and of the rifle in the opposite direction) ; and this, in turn, when the bullet strikes the iron target, into heat energy or increased speed of motion in all directions of